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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,480	11/20/2001	Indulis Gruzins	102123-200	3615

7590

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EXAMINER

OH, TAYLOR V

ART UNIT	PAPER NUMBER
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1625

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/996,480

**Applicant(s)**

GRUZINS ET AL.

**Examiner**

Taylor Victor Oh

**Art Unit**

1625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 and 27-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 and 27-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/10/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

The Status of Claims

Claims 1-25 and 27-31 are pending.

Claims 1-25 and 27-31 have been rejected.

**Claim Objections**

The objection of Claims 20, 25, and 27 has been withdrawn due to the modification made in the amendment.

**Claim Rejections - 35 USC § 112**

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The rejection of Claims 2, 14, and 29 under 35 U.S.C. 112, second paragraph, has been maintained due to applicants' failure to modify the claims in the amendment, whereas the rejection of claims 6, 7, 25, 27, and 31 has been withdrawn due to the modification made in the claims in the amendment.

**Double Patenting**

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

The rejection of Claims 1, 3, 5-19, 21-26, and 28-30 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Patent No. 6,716,913 has been withdrawn due to the Terminal Disclaimer filed on 2/28/05.

**Claim Rejections - 35 USC § 103**

**The rejection of Claims 1-25 and 27-31 under 35 U.S.C. 103(a) as being unpatentable over Housel et al (U.S. 6,103,822) has been changed to the rejection of Claims 1-31 under 35 U.S.C. 103(a) as being unpatentable over Housel et al (U.S. 6,103,822) in view of Koistinen et al (WO 98/50338).**

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The rejection of Claims 1-25 and 27-31 under 35 U.S.C. 103(a) as being unpatentable over Housel et al (U.S. 6,103,822) has been changed to the rejection of Claims 1-31 under 35 U.S.C. 103(a) as being unpatentable over Housel et al (U.S. 6,103,822) in view of Koistinen et al (WO 98/50338).

Because applicants have amended the claims, the new 103 rejection has been applied to the amended claims.

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-25 and 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Housel et al (U.S. 6,103,822) in view of Koistinen et al (WO 98/50338).

Housel et al teaches a polymeric acid functional polyol which is a reaction product of one polymer, such as polyester polyols, polyether polyols, polyetherester polyols and a nonaromatic polyanhydride in the presence of tin

metal oxide catalysts (see col. 13 ,lines 19-21) in an amount of from 0 to 30,000 ppm (see col. 13 ,lines 22-24) for the purpose of controlling the reaction. The polymeric acid functional polyol has an acid value of from 10 to 150, a hydroxy value of from 20 to 500 and a hydroxy functionality of at least 2, and preferably from 2 to 4 (see col. 3 ,lines 46-54).

Furthermore, Aliphatic diacids used in the esterification reaction are oxalic acid, malonic acid, succinic acid ,glutaric acid and their anhydrides ; in addition, the polyols useful in the esterification reaction can be monomeric or polymeric (see col. 9, lines 60-67). Exemplary monomeric polyols include ethylene glycol, trimethylol propane and etc. (see col. 10, lines 5-8). Besides, for the manufacturing polyester polyols, the reactant carboxylic acids may render a residual acid value of less than 10 mg KOH/g with polyester polyols having acid values less than 1.5 (see col. 1, lines 35-40).

Moreover, water borne polyurethanes are formed as a urethane reaction product of a polymeric acid functional polyol and a polyisocyanate (see col. 11, lines 5-7), which may selected from any polyisocyanates useful for preparing polyurethanes (see col. 11, lines 31-32). Valuable polyisocyanates may include 2,2'-, 2,4'- and 4,4'- diphenylmethane diisocyanates. (see col. 11, lines 54-56).

In addition, water borne polyurethanes may contain primary or secondary polyamines as chain extenders, property modifiers, or crosslinkers and their

examples are 1,2-ethylenediamine, hexamethylene diamine, isophorone diamine, 2,2-cyclohexylamine, and etc. (see col. 12 ,lines 50-59).

Also, in one of the examples (#9), an acid functional polyol product has a hydroxy functionality of at least 2 , and a viscosity of 12100 cps at 250<sup>0</sup> C. (see col. 19 ,lines 5-15).

The instant invention, however, differs from the prior art in that the claimed reaction product is formed in the presence of an organic acid or inorganic acid; the polyol composition has an oligomer content of less than 30 mg KOH/g.

Koistinen et al discloses the process of preparing complex polyol esters by reacting a polyol with mono- and polybasic acids and/ or anhydrides (see page 3 ,lines 9-10) in the presence of a catalyst , such as sulfuric acid, hydrochloric acid or metal oxides, such as titanates or tin oxides (see page 3 , lines 17-18) in the amount of from 0.05 to 0.5 % of the reacting components (see page 3 ,lines 16-18); the reaction mixture is treated with a base to neutralize the acid components, and the complex esters are retrieved (see page 1 ,lines 6-10). In the process, all the reactants are heated for 3-10 hours at 180-240<sup>0</sup> C until the acid number has decreased below 10 mg KOH/g (see page 3 ,lines 12-15).

With respect to the oligomer content of less than 30 mg KOH/g, the reference does indirectly indicate the oligomer content in view of the passages of the prior art (see col. 4, lines 9-16), which describes that the reaction is terminated when the acid functional polyol has an acid value of from 10 to 150 during the process for making the polymeric acid functional polyol based on the esterified products. Therefore, it does teach that the prior art's polyol composition has an oligomer content of less than 30 mg KOH/g.

Housel et al does describe the polymeric acid functional polyol which is the reaction product of polyols and the acid anhydride in the presence of tin metal oxide catalysts (see col. 13, lines 19-21) in an amount of from 0 to 30,000 ppm (see col. 13, lines 22-24) for the purpose of controlling the reaction.

Similarly, Koistinen et al discloses the process of preparing complex polyol esters by reacting a polyol with mono- and polybasic acids or in the presence of a catalyst, such as sulfuric acid, hydrochloric acid or metal oxides, such as titanates or tin oxides; furthermore, the Koistinen et al has offered guidance that there is an equivalence of teaching regarding the use of the catalyst between the hydrochloric acid and tin oxides.

Both prior art processes have commonly dealt with the production of carboxy-containing polyol composition with similar reaction conditions (i.e. reactants). Therefore, it would have been obvious to the skillful artisan in the art to be motivated to employ Koistinen's et al hydrochloric acid into the Housel et al



process as an alternative to the Housel's et al tin oxide because the skilled artisan in the art would expect such a modification to be successful and effective as guidance shown in Koistinen et al .

1. Applicants' argument filed 2/28/05 have been fully considered but they are not persuasive.

#### **Applicants' Argument**

1. Housel does not raise the potential problems of forming unwanted side reactions as a result of using particular catalysts at a high temperature;
2. Housel does not suggest or disclose any catalyst system for achieving the result for a less viscosity composition than the one without using the organic or inorganic acid catalyst .

First, with respect to the first argument, the Examiner has noted applicants' argument. However, the claims are not directed to the potential problems of forming unwanted side reactions as a result of using particular catalysts at a high temperature, but the claims are directed to a low viscosity carboxyl containing polyol composition. Therefore, applicants' argument are irrelevant to the issue of the claims.

Second, with respect to the second argument, the Examiner has noted applicants' argument. However, the newly applied 103 rejection does cover the use of the organic or inorganic acid catalyst such as sulfuric acid, hydrochloric acid, titanates or tin oxides as shown in the secondary Koistinen et al reference. Therefore, applicants' argument are irrelevant to the issue of the claims.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

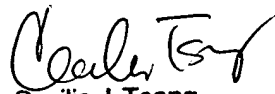
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

\*\*\* Taylor Oh  
5/23/05

  
Cecilia J. Tsang  
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